

### EXAMINER'S AMENDMENT

Applicant's after-final amendment dated 08/20/09 was entered.

Claims 1-14 are pending in the present application.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with attorney Jiawei Huang on September 01, 2009.

#### ***In the claims:***

Independent claims 1 and 11 were amended below.

***Claim 1 (Currently amended)*** A method for delivering a biological material using a gene gun, comprising:

providing the gene gun comprising a pressurized chamber, a sprayer, a controller valve and a material delivery system;

placing a sample solution into the material delivery system, wherein the sample solution comprises at least the biological material;

triggering the gene gun and providing a gas through the controller valve to the pressurized chamber until the gas establishes a pressure equal to or lower than 100 psi;

Art Unit: 1633

releasing the sample solution from the material delivery system, so that the sample solution is accelerated by the gas in the pressurized chamber; and

discharging the sample solution out of the sprayer, wherein the sprayer includes a spray nozzle and a spray tube, and the spray nozzle comprises an interior contour, wherein the interior contour of the spray nozzle comprises a diverging part, a converging part and a spray neck positioned between the diverging part and the converging part and connected to the material delivery system, wherein the sample solution is released from the material delivery system around the spray neck of the spray nozzle and is released in a direction perpendicular to a direction of the flow of the gas, and the spray tube is a diverging straight tube, so that the biological material is evenly injected into a target,

**Deleted:** a discharge speed of the sample solution is supersonic and  
**Formatted:** Strikethrough

wherein the biological material is delivered without using micro-carriers or particle carriers.

**Claim 11 (Currently amended)** A method for gene transformation by using a gene gun, comprising:

providing the gene gun comprising a pressurized chamber, a sprayer, a controller valve and a material delivery system;

placing a sample solution into the material delivery system, wherein the sample solution comprises at least a nucleic acid;

triggering the gene gun and providing a gas through the controller valve to the pressurized chamber to establish a pressure equal to or lower than 100 psi, wherein the gas is a nitrogen gas or a helium gas;

releasing the sample solution from the material delivery system after the gas in the pressurized chamber establishes the pressure, so that the sample solution is accelerated by the gas in the pressurized chamber; and

discharging the sample solution out of the sprayer, wherein the sprayer includes a spray nozzle and a spray tube, and the spray nozzle comprises an interior contour, wherein the interior contour of the spray nozzle comprises a diverging part, a converging part and a spray neck positioned between the diverging part and the converging part and connected to the material delivery system, wherein the sample solution is released from the material delivery system around the spray neck of the spray nozzle and is released in a direction perpendicular to a direction of the flow of the gas, and the spray tube is a diverging straight tube, so that the nucleic acid is evenly injected into a target,

**Deleted:** a discharge speed of the sample solution is supersonic and  
**Formatted:** Strikethrough

wherein the nucleic acid is delivered without using micro-carriers or particle carriers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang Nguyen, Ph.D., whose telephone number is (571) 272-0776.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Joseph T. Woitach, Ph.D., may be reached at (571) 272-0739.

**To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1633; Central Fax No. (571) 273-8300.**

Art Unit: 1633

**Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.**

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

/QUANG NGUYEN/

Primary Examiner, Art Unit 1633

